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10/738,410

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EXAMINER

NGUYEN, TU X

ART UNIT

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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

## Office Action Summary

Application No.

10/738,410

Applicant(s)

TSIEN ET AL.

Examiner

Tu X. Nguyen

Art Unit

2618

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☐ Responsive to communication(s) filed on 16 December 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-30 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-3, 7-9, 11-13, 16-21, 24, 26, 28 is/are rejected.
- 7) ☒ Claim(s) 4-6, 10, 14, 15, 22, 23, 25, 27 and 29 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 01 June 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☒ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date 7/8/05, 2/6/07.
- ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- ☐ Notice of Informal Patent Application
- ☐ Other: \_\_\_\_\_.

## **DETAILED ACTION**

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1, 7-9, 16, 19-21, 28 and 30, are rejected under 35 U.S.C. 102(e) as being anticipated by Watson et al. (US Pub.20040082356).

Regarding claim 1, Watson et al. disclose a method comprising adjusting a communication station transmit power level for orthogonal frequency-division multiplexed (see par.011) signal transmissions to an access point based on an access point sensitivity (see par.0680), a path loss (see par.0679) and a link margin variation (see par.0682).

Regarding claims 7, 19 and 30, Watson et al. disclose estimating the link margin variation from at least one of an access point transmit power variation, a path loss variation, and a receiver power measurement error of the communication station (see par.0682).

Regarding claims 8 and 20, Watson et al. disclose the path loss variation is based on whether the access point is indoors or outdoors, wherein the access point transmit power variation is based on characteristics of the access point, and wherein the receiver power measurement error is based on characteristics of a communication station (see par.067).

Regarding claim 9, Watson et al. disclose reporting a communication station link margin and the communication station transmit power level to the access point, wherein the access

point is to determine whether to adjust an access point transmit power level based on the communication station link margin and transmit power level (see par.0682).

Regarding claim 16, Watson et al. disclose a communication station comprising: a transmitter to transmit orthogonal frequency-division multiplexed signals to an access point; and a controller (see fig.7, element 780x,y) to adjust a communication station transmit power level of the transmitter based on an access point sensitivity, a path loss, and a link margin variation (see par.0679-0682).

Regarding claim 21, Watson et al. disclose the controller is to configure the transmitter to report a communication station link margin and the communication station transmit power level to the access point, and wherein the access point is to responsively determine whether to adjust the access point transmit power level based on the reported communication station link margin and communication station transmit power level (see par.0217).

Regarding claim 28, Wastson et al. disclose a machine-readable medium that provides instructions, which when executed by one or more processors (see par.0687), cause said processors to perform operations comprising adjusting a communication station transmit power level for orthogonal frequency-division multiplexed signal transmissions to an access point based on an access point sensitivity, a path loss, and a link margin variation (see par.0679-0682).

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 2-3 and 17-18, are rejected under 35 U.S.C. 103(a) as being unpatentable over Watson et al. (US Pub.20040082356) in view of Choi et al. (US Pub.20020168993).

Regarding claims 2 and 17, Watson et al. disclose measuring a received power level of orthogonal frequency-division multiplexed signals at a communication station (see par.0484); However Watson et al. fail to disclose estimating the path loss from an access point transmit power level and the measured received power level.

Choi et al. disclose estimating the path loss from an access point transmit power level and the measured received power level (see abstract). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the system of Watson et al. with the above teaching of Choi et al. in order to provide a path loss based on the different between transmit power level and received power level.

Regarding claims 3 and 18, the modified Watson et al. disclose requesting the access point transmit power level from the access point prior to estimating the path loss, the access point transmit power level having been used by the access point to transmit the orthogonal frequency-division multiplexed signals (see Watson, par.0197-0198).

Claims 11-13, are rejected under 35 U.S.C. 103(a) as being unpatentable over Watson et al. (US Pub.20040082356).

Regarding claims 11 and 13, Watson et al. disclose the communication station operating as part of a wireless local area network communicating orthogonal division

multiplexed signals with the access point (see abstract), wherein the orthogonal frequency-division multiplexed signals are within a subchannel comprising a plurality of orthogonal frequency-division multiplexed subcarriers (see par.0185-0186). Watson et al. fail to disclose wherein each subcarrier of the subchannel has a null at substantially a center frequency of other subcarriers of the subchannel; however, the Examiner takes an official notice that the concept the subchannel has a null at substantially a center frequency of other subcarriers of the subchannel is available in the art.

Regarding claim 12, Watson et al. disclose measuring an average received power level across the subcarriers of the subchannel, wherein the communication station transmit power level is initially set at a predetermined maximum level, and wherein adjusting comprises reducing the communication station transmit power level (see par.0681).

Claims 24 and 26, are rejected under 35 U.S.C. 103(a) as being unpatentable over Watson et al. (US Pub.20040082356) in view of Batra et al. (US pub.20040151109).

Regarding claim 24, Watson et al. disclose a system comprising: a transmitter to transmit orthogonal frequency-division multiplexed signals to an access point via the antenna; and a controller to adjust a communication station transmit power level of the transmitter based on an access point sensitivity, a path loss, and a link margin variation (see par.0679-0682).

Watson et al. fail to disclose a substantially a omnidirectional antenna.

Batra et al. disclose a omnidirectional antenna (see par.0349-0350). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to

modify the system of Watson et al. with the above teaching of Batra et al. in order to provide higher frequency band and less power transmission.

Regarding claim 26, the modified Watson et al. disclose the controller is to estimate the link margin variation from at least one of an access point transmit power variation, a path loss variation, and a receiver power measurement error of the receiver, wherein the controller is to determine the path loss variation based on whether the access point is indoors or outdoors, wherein the access point transmit power variation is based on characteristics of the access point, and wherein the receiver power measurement error is based on characteristics of the receiver (see Watson, par.067).

***Allowable Subject Matter***

Claims 4-6, 10, 14-15, 22, 23, 25, 27 and 29, objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is an examiner's statement of reasons for allowance:

Regarding claims 4, 15, 25 and 29, the prior art fails to teach "calculating the access point sensitivity by subtracting the path loss and an access point link margin from the communication station transmit power level", as cited in the claim.

Regarding claim 10, the prior art fails to teach "Watson et al. fail to disclose calculating the communication station link margin from the data rate and the communication station sensitivity, wherein the determining the communication station sensitivity comprises looking

up the communication station sensitivity in a table based on the data rate", as cited in the claim.

Regarding claims 14, 23 and 27, the prior art fails to teach "performing an open-loop transmit power control procedure when the access point transmit power level is not received from the access point, wherein the open-loop transmit power control procedure includes: retrieving a communication station receiver sensitivity based on a data rate of an orthogonal frequency-division multiplexed symbol from a table; and reducing the communication station transmit power level by a first amount when the received power level exceeds the communication station receiver sensitivity by a second amount", as cited in the claim.

Regarding claim 22, the prior art fails to teach "determine a data rate of an orthogonal frequency-division multiplexed symbol received by the receiver; determine a communication station sensitivity based on the data rate, the communication station sensitivity being either predetermined or precalibrated for various data rates; and calculate the communication station link margin from the data rate and the communication station sensitivity", as cited in the claim.


### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tu Nguyen whose telephone number is 571-272-7883.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edward Urban, can be reached at (571) 272-7899. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.



Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



June 18, 2007